the source node.

The method includes determining whether a first transaction message has a dependency on a preceding non-completed transaction message. Responsive to the first transaction message having a dependency on the preceding non-completed transaction, the method further includes holding the first transaction message; completing the preceding non-completed transaction message including applying the row change associated with the preceding non-completed transaction message to the table copy at the target node; and responsive to completing the preceding non-completed transaction message, releasing the first transaction message and applying the row change associated with the first transaction message to the table copy at the target node.

A. *Georga Fails To Disclose Holding a First Transaction Message Responsive to a Determination that the First Transaction Message Has a Dependency on a Preceding Non-Completed Transaction Message*

Georga discloses a chronological scheduler for use in a database system that preserves temporal dependencies between transactions (see Abstract). In particular, the transaction synchronization approach implemented by the chronological scheduler is a time warp mechanism (TWM), which includes use of partial transaction and data object rollback for the synchronization of transactions (page 11, section 5). In operation, TWM stamps a given message with a timestamp that becomes a timestamp of a transaction. And transaction objects process messages in timestamp order. A synchronization conflict arises in TWM when a new message arrives out of order – i.e., has a timestamp (ts) that is less than a timestamp of a previous message already processed by the transaction object. In such a case, the transaction object: (1) performs a rollback that cancels the effect of messages having a timestamp greater than (ts); (2) processes the new message; and then (3) starts re-executing messages with timestamps greater than (ts)

(page 12, first full paragraph).

Although Georga discloses preserving temporal dependencies between transactions, Georga fails to disclose holding a first transaction message responsive to a determination that the first message has a dependency on a preceding non-completed transaction. Georga does not hold any transaction messages as TWM "neither delays read and write operations so they can be processed in timestamp order" (page 12, first full paragraph, lines 7-9). Instead, as discussed above, Georga invokes a rollback process if a new message arrives out of order. A rollback necessarily infers that previously received transactions were not held back. A consequence of Applicant's claimed method is that a rollback process is not required, unlike in Georga's method.

Moreover, while Georga discloses preserving temporal dependencies between transactions, Georga fails to disclose that such preservation of temporal dependencies between transactions is applicable within the context of asynchronous data replication in a database system. See MPEP 2163.07 - "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

For at least these reasons, Applicant respectfully submits that claim 1, and the claims that depend therefrom, are allowable over Georga.

B. Other Independent Claims

Claims 14 and 27 each incorporates limitations similar to those of claim 1. Claims 14 and 27 (and the claims that depend therefrom) are also allowable over Georga for reasons corresponding to those set forth with respect to claim 1.

Upon review of the file, Applicant notes that the Examiner has not provided an initialed and signed copy of the Form PTO 1449, which made it to the office on February 27, 2004. Please provide an initialized and signed copy of the form to Applicant at the Examiner's earliest convenience.

Should any unresolved issues remain, Examiner is invited to call the undersigned at the telephone number indicated below.

Respectfully submitted,

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